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November 30, 2000

## BOX PCT

Assistant Commissioner for Patents  
Washington, D.C. 20231

PCT/FR00/00802  
-filed March 30, 2000

Re: Application of Fabrice BANCTEL, Armel PIETRE  
METHOD FOR CREATING A DISTRIBUTED OBJECT TREE  
Our Ref: Q61879

Dear Sir:

The following documents and fees are submitted herewith in connection with the above application for the purpose of entering the National stage under 35 U.S.C. § 371 and in accordance with Chapter I of the Patent Cooperation Treaty:

- ☒ an executed Declaration and Power of Attorney.
- ☒ an English translation of the International Application.
- ☒ 2 sheet(s) of formal drawings.
- ☐ an English translation of Article 19 claim amendments.
- ☐ an English translation of Article 34 amendments (annexes to the IPER).
- ☒ an executed Assignment and PTO 1595 form.
- ☒ an Information Disclosure Statement with Form PTO-1449 listing the ISR references, and a complete copy of each reference.
- ☒ a Preliminary Amendment

It is assumed that copies of the International Application, the International Search Report, the International Preliminary Examination Report, and any Articles 19 and 34 amendments as required by § 371(c) will be supplied directly by the International Bureau, but if further copies are needed, the undersigned can easily provide them upon request.

Assistant Commissioner of Patents  
Washington, D.C. 20231  
Page 2  
Attorney Docket Q61879  
November 30, 2000

**PLEASE SEE THE ATTACHED PRELIMINARY AMENDMENT BEFORE  
CALCULATING THE FEE**

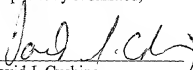
The Government filing fee is calculated as follows:

Total claims	<u>9</u>	-	<u>20</u>	=	_____	x	\$18.00	=	<u>\$0.00</u>
Independent claims	<u>1</u>	-	<u>3</u>	=	_____	x	\$80.00	=	<u>\$0.00</u>
Base Fee									\$860.00
<b>TOTAL FILING FEE</b>									<b>\$860.00</b>
Assignment Recordation Fee									40.00
<b>TOTAL FEE</b>									<b>\$900.00</b>

Checks for the statutory filing fee of \$860.00 and assignment recordation fee of \$40.00 are attached. You are also directed and authorized to charge or credit any difference or overpayment to Deposit Account No. 19-4880. The Commissioner is hereby authorized to charge any fees under 37 C.F.R. §§ 1.16, 1.17 and 1.492 which may be required during the entire pendency of the application to Deposit Account No. 19-4880. A duplicate copy of this transmittal letter is attached.

Priority is claimed from April 01, 1999 based on French Application No. 9904072.

Respectfully submitted,



David J. Cushing  
Registration No. 28,703

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Date: November 30, 2000

## METHOD OF IMPLEMENTING A TREE OF DISTRIBUTED OBJECTS

5 The present invention concerns a method of organizing distributed objects in a hierarchy.

The invention applies to many applications employing a distributed object environment, for example telecommunication or transportation supervision applications, applications constituting an intelligent network, etc.

10 In a distributed object environment, an application can use different servers to provide services to clients.

The term "process" refers to a program which runs in a given environment. An object of the process is a software entity in the process.

In an application, the distributed objects are in practice organized in accordance with a given tree.

15 In the tree, each object has a logical name, i.e. a character string, which specifies the logical access path to that object from the starting object, i.e. the root, of the tree. The logical name is absolute in the sense that it is determined relative to the root.

20 It is also possible to specify the logical access path from an object other than the root. The term "relative logical name" is then used.

In any distributed object system based on an ORB, it is often necessary to access objects directly. The absolute or relative logical names of the objects must be used for this, enabling a logical access path to the required object to be found.

25 Furthermore, it is generally possible to ask a father object directly for access to a son object. In the request to the father object the relative logical name relative to the father object is used to designate the son object.

Because the objects are distributed, the tree of the objects in practice has many branches and the branches or parts of the branches can correspond to distinct processes. Figure 1 is a diagram showing a simplified example of an object tree.

30 Under a main process P0, which constitutes the root of the tree of the system, there are three distinct processes P1, P2, P3. The process P1 situated directly under the root comprises three objects, namely a first object A, which is the entry object or root of the process, from which depart two branches to two objects B and C. A final branch departs from the object B towards an object D of the process P2.

35 The process P3 situated directly under the root comprises a single object X.

In a practical implementation of the tree of the system the objects contain information on their respective sons. If the son objects are contained in the same process as the father object, the information consists of pointers giving the physical addresses of the son objects. If the son objects are not contained in the same process as the father object, the information is made up of references. For example, the object A contains a pointer to the object B and a pointer to the object D. The object B contains a reference to the object D.

The logical access path for accessing the object D from the root, i.e. the absolute logical name, can be written /A/B/D. It is therefore necessary to pass through the object B to arrive at the object D. This is the case whether the object D is reached by interrogating the object B directly, that object being identified by the absolute logical name /A/B, for the son object identified in the object B by a reference, or by interrogating the root for the object identified by the (absolute) logical name /A/B/D.

The objects A and B are in the process P1 and the object D is in another process P2. If the process P1 is not running, or has failed, it is no longer possible to access the object D with this tree.

Furthermore, this tree makes managing process redundancy difficult. In the example shown in figure 1, there is a redundant back-up process P2' which is substituted for the process P2 if it fails. With the tree previously explained, it is up to each object that receives a request regarding an object that is not in its process to determine to which of the two processes P2 and P2' it should transmit the request. Clearly this makes managing redundancy particularly complex. Redundant processes are routinely used to strengthen the weak points of a system, i.e. the processes that are likely to fail often, whether their failure paralyses the entire system or merely reduces the quality of service.

For the above reasons a different tree of the objects of a distributed object system has been proposed, to enable access to all the objects of the system even if some father objects are not available (failed or stopped) and to simplify the management of process redundancy. This tree employs centralized management of the tree at the level of the root, by means of a central directory, which contains structured names of all the objects. In other words, it contains all of the tree of the system.

In this tree, if a father object is interrogated for a son object, the call is redirected to the central directory. It is then always possible to access an object even

if, within the tree, that object is a son of other processes which are stopped. What is more, this also centralizes management of redundancy, which is managed by means of the same central directory.

However, this tree is very costly in terms of resources: if the number of objects is large, the central directory can be overloaded and the performance of the system seriously degraded, because of the time needed to consult the tree in the central directory for each call.

Furthermore, this solution no longer takes into account the specific nature of the distributed environment, since it treats each object identically. All calls are processed by the central directory, even if the call concerns a son object of a father object in the same process. This increases the volume of inter-process communication unnecessarily.

Finally, if the system uses the object-object protocol based on the creation of pairs of representative elements, for example the proxy/stub pairs of distributed environments based on the DCOM ORB, as the protocol for communication between objects, the centralized directory solution multiplies the number of these pairs, because it implies the creation of a pair of representative elements for each object in the tree. The pairs of representative elements are very costly in terms of memory resources.

Accordingly, an object of the invention is to provide a method of implementing a tree of distributed objects that does not have the aforementioned disadvantages.

The invention uses a central directory which contains tree information on only certain targeted objects, and so all the objects of a process can be accessed.

According to the invention, if a father object receives a location request in respect of a son object, it accesses the son object, if the latter is in the same process, or returns the call to the central directory, if it is not in the same process.

In other words, the tree within a given process is managed internally in that process, the objects of the process containing the necessary pointers to the son objects contained in the process, i.e. the physical addresses of those objects in the process concerned, but the tree of processes is managed by the central directory. This has the advantage of providing access to objects of son processes even if a father process is stopped; this enables problems of redundancy at the level of the central directory to be managed; finally, it enables the response time of the central directory to be optimized, because it has only a partial tree to manage, and it

enables the memory resources necessary for implementing the tree to be optimized.

As characterized, the invention therefore concerns a method which includes a step consisting of assigning to a father object in a process, for each son object:

- information corresponding to a physical address pB if the son object is contained in same process, or
- information referring back to said central directory if the son object is not contained in the same process.

Other features and advantages of the invention are described in the following description, which is given by way of non-limiting illustrative example only, and with reference to the accompanying drawings, in which:

- figure 1, already described, is a simplified block diagram of a prior art tree of distributed objects; and

- figure 2 is a block diagram of a tree of distributed objects in accordance with the invention.

The invention provides a central directory corresponding to the process Pr0 in figure 2. That process is the root of the tree.

There are different processes under the root process Pr0.

A first process Pr1 contains three objects A, B and C. In this process, the object A is the root object. The root object of a process is an entry object of the process. Note that there can be more than one in the same process.

The objects B and C are two son objects of the object A.

A redundant process Pr1' is a replica of the first process. In particular, it contains the same objects with the same tree.

A second process Pr2 contains two objects D and F. In this process, the object D is the root and the object F is a son object of the object D. The object D is also a son object of the object B of the process Pr1.

A redundant process Pr2' is a replica of the second process. In particular, it contains the same objects with the same tree.

The central directory contains a data structure Tab0 in which it stores information relating to the tree of the system.

In practice, it contains at least all the information relating to the entry objects (root objects) of each distinct process of the tree.

In this example, in entry E1 of the data structure there is information relating to the object A of the process Pr1: logical name relative to the central directory /A, pointer pPr1 to the corresponding process Pr1, and other information required for its

management.

In entry E2 there is information concerning the object A of the redundant process Pr1'; in entry E3 there is information on the object D of the process Pr2; in entry E4 there is information on the object D of the process Pr2'.

- 5 The central directory therefore contains the tree of the processes in the system.

According to the invention, a father object in a process (other than the central directory) contains information on its son objects, which takes the form of pointers, i.e. their physical addresses, if they are contained in the same process. Thus  
10 the object A contains pointers pB and pC to the son objects B and C, respectively.

If the son object is not in the same process, the father object contains information for returning the call to the central directory. Thus if the object B receives a request for the son object D identified by its logical name /D relative to the object B, the object B returns the request to the central directory.

- 15 In practice, it returns the request by placing the character string of its own absolute logical name, relative to the central directory, in front of the character string of the relative logical name of the object D. In the example, the absolute logical name of the object B is the character string /A/B. Accordingly, the object B transmits the request to the central directory by supplying it with the absolute logical name  
20  $N(D) = /A/B/D$  of the object D.

- If the central directory receives a request relating to an object identified by its logical name relative to the central directory, it consults its internal data structure, which is of the dictionary type, and looks up the corresponding character string. If it finds it, it obtains a corresponding reference of the object in the system. That  
25 reference enables it to transmit the request directly to the object. If it does not find it, it looks for the longest character string corresponding to a first part of the character string, in order to transmit the request to a father object for the given object identified by its relative name relative to that father object. That relative name is obtained as the reference between the two character strings. Take the example of a request  
30 received by the directory for the object C defined by its logical name  $N(C) = /A/C$ .

The central directory searches its data structure for that string or the longest string corresponding to its first part (i.e. the start of the string). In this example it will find the string /A, which is the logical name of the object A.

- It therefore transmits the request relating to the object C to the object A,  
35 sending it by way of identification the relative logical name of the object C relative to



the object A. That relative logical name is simply obtained as the difference between the two character strings:  $/A/C - /A = /C$ .

In accordance with the invention, if the object to which the directory has sent a request relating to a son object cannot find the son object in its process, it sends a message to the central directory, which looks for another object in its directory. It can also place corresponding information in its data structure.

With regard to managing redundancy, figure 2 shows that the data structure Tab0 contains all the objects with the same logical names corresponding to different processes. To each entry in the table there corresponds a physical identification of the corresponding process. Thus in entry E1 there is the name  $/A$  for a process identified by a parameter pPr1 corresponding to the process Pr1. In the entry E2 there is the name  $/A$  for a process identified by a parameter pPr1' corresponding to the redundant process Pr1'.

As in the invention, as soon as an object of a process has a request relating to a son object of another process to manage, it sends its request to the central directory, which is entirely responsible for managing redundancy. In other words, it is the central directory which determines at a given time whether to send the call to the process Pr1 or to its process Pr1', depending on information on the status of the system. Thus management of redundancy is centralized.

As already mentioned, the central directory preferably contains information relating to the entry objects (root objects) of each process of the system. It therefore contains the tree of the processes (including the redundancy), while the tree in the processes is implemented internally in each process.

Finally, note that the central directory is a sensitive point of the system. Thus in practice protection mechanisms or a redundant central directory are provided in order to obtain a robust mechanism.

It has been shown that the invention applies in a distributed object environment.

One particular application concerns an environment based on a distributed Object Request Broker (ORB). ORBs known in the art include the CORBA (Common Object Request Broker Architecture) and DCOM (Distributed Component Object Mode) ORBs.

**CLAIMS**

1. A method of implementing a tree of distributed objects in different processes, there being a central directory (Pr0) adapted to store information on objects in a data structure (Tab0) at the root of the tree, characterized in that it includes a step consisting of assigning to a father object (A) in a process, for each son object (B):
  - information corresponding to a physical address (pB) if the son object is contained in same process, or
  - information referring back to said central directory if the son object is not contained in the same process.
2. A method according to claim 1, characterized in that if the central directory (Pr0) receives a request for access to a first object (C) identified by a logical name identifying a logical access path of said first object from the central directory (/A/C), it searches its data structure for the logical name received in order to send the request directly to said object or, if said logical name is not in its directory, it searches for a logical name (/A) with the longest character string equal to a first part of the character string of the logical name received, in order to send to a father object determined in this way the request relating to the first object, by providing said father object with information (/B) corresponding to the logical access path of the first object relative to the father object.
3. A method according to claim 2, characterized in that the father object which receives said request sends the request to said first object if it is a son object of its process or returns a message to the central directory.
4. A method according to any preceding claim, characterized in that the central directory manages the redundancy of the processes by selecting one of several processes containing the requested object.
5. A method according to any preceding claim, characterized in that if a father object of a process receives a request relating to a son object directly it returns that request to the central directory if said son object is not contained in its process.
6. A method according to claim 5, the son object being identified in said request by a logical name defining the logical access path of that object from said father object, characterized in that said father object returns said request to the central directory with the character string of said logical name preceded by the character string corresponding to its own logical name defining its logical access path from

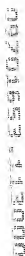
the central directory.

7. A method according to any preceding claim, characterized in that the central directory contains at least information relating to each root object of each process.
- 5 8. A method according to any preceding claim, characterized in that it applies to a distributed object environment based on a manager of the CORBA type.
9. A method according to any of claims 1 to 7, characterized in that it applies to a distributed object environment based on a manager of the DCOM type.

## ABSTRACT

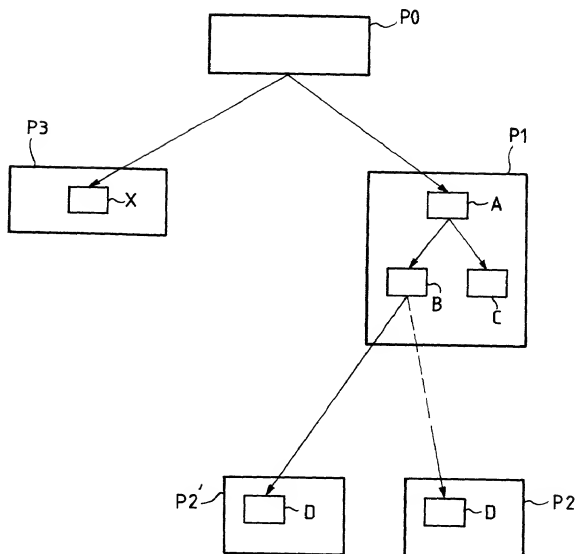
A method of implementing a tree of distributed objects in different processes, there being a central directory PrO adapted to store information on objects in a data structure TabO at the root of the tree, characterized in that it includes a step consisting of assigning to a father object A in a process, for each son object B information corresponding to a physical address pB if the son object is contained in same process or information referring back to said central directory if the son object is not contained in the same process.

Figure 2



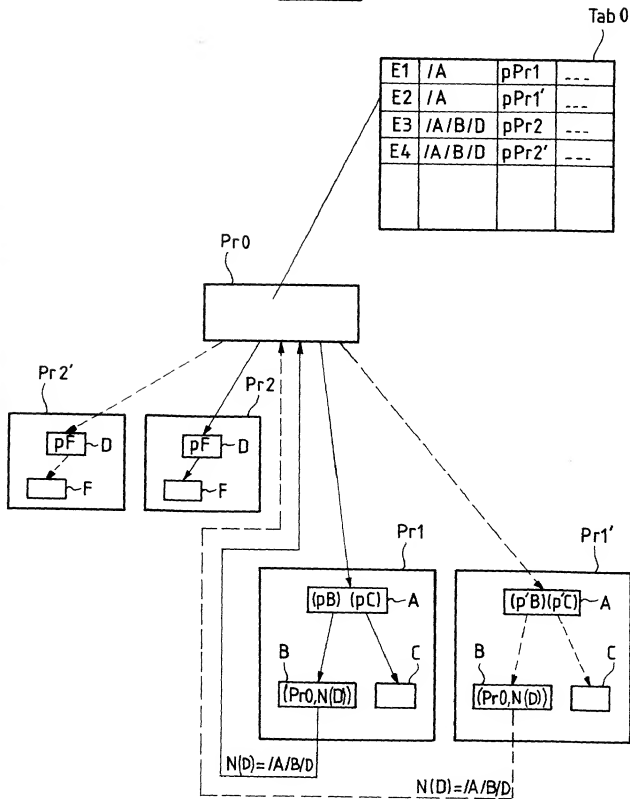
1/2

FIG. 1



2/2

FIG\_2



## French Language Declaration

### Declaration and Power of Attorney for Patent Application

#### Déclaration et Pouvoirs pour Demande de Brevet

(PCT International Application PCT/FR00/00802 filed on March 30, 2000)

#### French Language Declaration

En tant que l'inventeur nommé ci-après, je déclare par le présent acte que:

As a below named inventor, I hereby declare that:

Mon domicile, mon adresse postale et ma nationalité sont ceux figurant ci-dessous à côté de mon nom.

My residence, post office address and citizenship are as stated next to my name.

Je crois être le premier inventeur original et unique (si un seul nom est mentionné ci-dessous), ou l'un des premiers co-inventeurs originaux (si plusieurs noms sont mentionnés ci-dessous) de l'objet revendiqué, pour lequel une demande de brevet a été déposée concernant l'invention de la description identifiée par le numéro de référence

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention in the specification identified by Docket No.

**101872/SYC/NAD**

Je déclare par le présent acte avoir passé en revue et compris le contenu de la description ci-dessus, revendications comprises.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims.

Je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56.

Je revendique par le présent acte avoir la priorité étrangère, en vertu du Titre 35, § 119(a)-(d) ou § 365(b) du Code des Etats-Unis, sur toute demande étrangère de brevet ou certificat d'inventeur ou, en vertu du Titre 35, § 365(a) du même Code, sur toute demande internationale PCT désignant au moins un pays autre que les Etats-Unis et figurant ci-dessous et, j'ai aussi indiqué ci-dessous toute demande étrangère de brevet, tout certificat d'inventeur ou toute demande internationale PCT ayant une date de dépôt précédant celle de la demande à propos de laquelle une priorité est revendiquée.

I hereby claim foreign priority under Title 35, United States Code, § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate, or § 365(a) of any PCT International application which designated at least one country other than the United States, listed below, and have also identified below any foreign application for patent or inventor's certificate, or PCT International application having a filing date before that of the application on which priority is claimed.

rior foreign application(s) for which priority is claimed

emande(s) de brevet étrangère(s) antérieure(s) dont la priorité est revendiquée

(Number) (Numéro)	(Country) (Pays)	(Day/Month/Year Filed) (Jour/Mois/Année de dépôt)
99 04 072	FRANCE	01 APRIL 1999

rior foreign applications for which priority is not claimed

mande(s) de brevet étrangères antérieure(s) dont la priorité n'est pas revendiquée

(Number) (Numéro)	(Country) (Pays)	(Day/Month/Year Filed) (Jour/Mois/Année de dépôt)

## French Language Declaration

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 119(e) du Code des Etats-Unis, de toute demande de brevet provisoire effectuée aux Etats-Unis et figurant ci-dessous.

I hereby claim the benefit under Title 35, United States Code, § 119(e) of any United States provisional application(s) listed below.

(Application No.)  
(No de demande)

(Filing Date)  
(Date de dépôt)

Je revendique par le présent acte tout bénéfice, en vertu du Titre 35, § 120 du Code des Etats-Unis, de toute demande de brevet effectuée aux Etats-Unis, ou en vertu du Titre 35, § 365(c) du même Code, de toute demande internationale PCT désignant les Etats-Unis et figurant ci-dessous et, dans la mesure où l'objet de chacune des revendications de cette demande de brevet n'est pas divulgué dans la demande antérieure américaine ou internationale PCT, en vertu des dispositions du premier paragraphe du Titre 35, § 112 du Code des Etats-Unis, je reconnais devoir divulguer toute information pertinente à la brevetabilité, comme défini dans le Titre 37, § 1.56 du Code fédéral des réglementations, dont j'ai pu disposer entre la date de dépôt de la demande antérieure et la date de dépôt de la demande nationale ou internationale PCT de la présente demande.

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s), or § 365(c) of any PCT International application designating the United States, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, § 1.56 which became available between the filing date of the prior application and the national or PCT International filing date of this application.

(Application No.)  
(NO de demande)

(Filing Date)  
(Date de dépôt)

(Status)(patented, pending, abandoned)  
(Statut)(breveté, en cours d'examen, abandonné)

Je déclare par le présent acte que toute déclaration ci-incluse est, à ma connaissance, véridique et que toute déclaration formulée à partir de renseignements ou de suppositions est tenue pour véridique; et de plus, que toutes ces déclarations ont été formulées en sachant que toute fausse déclaration volontaire ou son équivalent est passible d'une amende ou d'une incarcération, ou des deux, en vertu de la Section 1001 du Titre 18 du Code des Etats-Unis, et que de telles déclarations volontairement fausses risquent de compromettre la validité de la demande de brevet ou du brevet délivré à partir de celle-ci.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



## French Language Declaration

POUVOIRS: En tant que l'inventeur cité, je désigne par la présente l'(les) avocat(s) et/ou agent(s) suivant(s) pour qu'ils poursuive(nt) la procédure de cette, demande de brevet et traite(nt) toute affaire s'y rapportant avec l'Office des brevets et des marques: (mentionner le nom et le numéro d'enregistrement).

John H. Mion, Reg. No. 18,879; Thomas J. Macpeak, Reg. No. 19,292; Robert J. Seas, Jr., Reg. No. 21,092; Darryl Mexic, Reg. No. 23,063; Robert V. Sloan, Reg. No. 22,775; Peter D. Olexy, Reg. No. 24,513; J. Frank Osha, Reg. No. 24,625; Waddell A. Biggart, Reg. No. 24,861; Louis Gubinsky, Reg. No. 24,835; Neil B. Siegel, Reg. No. 25,200; David J. Cushing, Reg. No. 28,703; John R. Inge, Reg. No. 26,916; Joseph J. Ruch, Jr., Reg. No. 26,577; Sheldon I. Landsman, Reg. No. 25,430; Richard C. Turner, Reg. No. 29,710; Howard L. Bernstein, Reg. No. 25,665; Alan J. Kasper, Reg. No. 25,426; Kenneth J. Burchfiel, Reg. No. 31,333; Gordon Kit, Reg. No. 30,764; Susan J. Mack, Reg. No. 30,951; Frank L. Bernstein, Reg. No. 31,484; Mark Boland, Reg. No. 32,197; William H. Mandir, Reg. No. 32,156; Scott M. Daniels, Reg. No. 32,562; Brian W. Hannon, Reg. No. 32,778; Abraham J. Rosner, Reg. No. 33,276; Bruce E. Kramer, Reg. No. 33,725; Paul F. Neils, Reg. No. 33,102; and Brett S. Sylvester, Reg. No. 32,765; and Robert M. Masters, Reg. No. 35,603.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: (list name and registration number)

Adresser toute correspondance à:

Send Correspondence to:  
SLIGHRIE, MION, ZINN, MACPEAK & SEAS, PLLC  
2100 Pennsylvania Avenue, N.W., Suite 800  
Washington, D.C. 20037-3213

Nom complet de l'unique ou premier inventeur	180	Full name of sole or first inventor (First Middle Last) Fabrice BANCTEL
Signature de l'inventeur	Date	Inventor's signature 09/04/2000
Domicile		Residence 91190 GIF-SUR-YVETTE FRANCE PRX
Nationalité		Citizenship French
Adresse postale		Post Office Address 124, allée de la Pointe Genete 91190 GIF-SUR-YVETTE FRANCE
Nom complet du second co-inventeur	260	Full name of second joint inventor, if any (First Middle Last) Armel PIETRE
Signature du second inventeur	Date	Second inventor's signature 27/09/2000
Domicile		Residence 75015 PARIS FRANCE PRX
Nationalité		Citizenship French
Adresse postale		Post Office Address 6 bis rue Anselme Payen 75015 PARIS FRANCE

(Fournir les mêmes renseignements et la signature de tout co-inventeur supplémentaire.)

(Supply similar information and signature for third and subsequent joint inventors.)

# DECLARATION AND POWER OF ATTORNEY U.S.A.

FOR ATTORNEYS USE ONLY, 2001  
ATTORNEYS' DOCKET NO.

ALL PATENTS, INCLUDING DESIGN  
FOR APPLICATION BASED ON PCT; PARIS CONVENTION;  
NON PRIORITY; OR PROVISIONAL APPLICATIONS

As a below named inventor, I declare that my residence, post office address and citizenship are stated below next to my name, the information given herein is true, that I believe that I am the original, first and sole inventor (if only one name is listed at 201 below), or an original, first and joint inventor (if plural inventors are named below at 201-203, or on additional sheets attached hereto) of the subject matter which is claimed and for which patent is sought on the invention entitled:

## A method for stimulating the immune system

which is described and claimed in:

☒ PCT International Application No. PCT/EP 99/04013

filed June 10, 1999

☐ the attached specification

☐ the specification in application Serial No. \_\_\_\_\_

filed \_\_\_\_\_

(if applicable) and amended on \_\_\_\_\_

I hereby state that I have reviewed and understand the contents of the above-indented specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, §119 (a)-(d) of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

98 110 709.7

(Number)

DEP

(Country)

June 10, 1998

(Day/Month/Year Filed)

Priority Claimed

☒ Yes ☐ No

98 113 974.4

(Number)

EP

(Country)

July 25, 1998

(Day/Month/Year Filed)

☒ Yes ☐ No

(Number)

(Country)

(Day/Month/Year Filed)

☐ Yes ☐ No

I hereby claim the benefit under Title 35, United States Code, §119(e) of any United States provisional application(s) listed below:

Application No. \_\_\_\_\_

Filing Date \_\_\_\_\_

Application No. \_\_\_\_\_

Filing Date \_\_\_\_\_

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)

(Filing Date)

(Status: patented, pending, abandoned)

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys (Registration No. ) to prosecute this application, receive and act on instructions from my agent, and transact all business in the Patent and Trademark Office connected therewith. HARVEY B. JACOBSON, JR. (20,851); D. DOUGLAS PRICE (24,514); JOHN CLARKE HOLMAN (22,799); MARVIN R. STERN (20,648); ALLEN S. MELSER (27,215); MICHAEL R. SLOBASKY (26,421); JONATHAN L. SCHERER (29,851); IRWIN M. AISENBERG (19,007); WILLIAM E. PLAYER (31,408); YOON S. HAM (45,307) and NATHANIEL A. HUMPHRIES (22,772).

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I further declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment or both, under section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

SIGNATURE OF INVENTOR 201*	SIGNATURE OF INVENTOR 202*	SIGNATURE OF INVENTOR 203*
<i>[Signature]</i>	<i>[Signature]</i>	<i>[Signature]</i>
DATE	DATE	DATE
18. DEZ. 2000	18. DEZ. 2000	18. DEZ. 2000

☐ Additional inventors are named on separately numbered sheets attached hereto.

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